

Claims

- 5 1. A method for reducing the adverse effects of a fire, in which method smoke and combustion gases are removed from a space by spraying through at least one first spray head (2) a mist of a medium into a duct part (1) leading away from the space so as to generate a suction from the space into the duct near the orifice (4) of the duct (1), c h a r a c -
10 t e r i z e d in that, in a first step, the first spray head (2) is activated and, when necessary, a connection is opened from the space into the duct part (1) via the orifice (4) of the duct part by opening a shutter element (5) and, in a second step, the connection from the space into the duct part (1) is closed by means of the shutter element (5) at least
15 when the temperature of the combustion gases and/or smoke exceeds a predetermined value in the duct part or in its vicinity and, when necessary, the spraying through the first spray head (2) in the duct part (1) is stopped.
- 20 2. A method according to claim 1, c h a r a c t e r i z e d in that, in the next step, fire extinguishing medium is sprayed through at least one second spray head (21) into the space into which the orifice (4) of the duct has been open.
- 25 3. A method according to claim 1 or 2, c h a r a c t e r i z e d in that the operation of the shutter element (5) is linked to the operation of the first spray head (2) in such a way that the passage through the orifice (4) of the duct part (1) into the duct part is open at least when the first spray head (2) is in the activated state, and that the passage is closed
30 by the shutter element (5) typically when the supply of medium to the first spray head (2) is stopped.
- 35 4. A method according to any one of claims 1 - 3, c h a r a c t e r i z e d in that the temperature of the combustion gases is monitored, typically using a heat sensitive element, such as an ampoule (20), and when the temperature exceeds a set value, the passage (18) of the medium to the first spray head and/or to the actuator (6) of the shutter

element is closed on the basis of an impulse obtained from said heat sensitive element, e.g. when the ampoule bursts.

5 5. A method according to any one of claims 1 - 4, c h a r a c t e r -
i z e d in that the shutter element (5) is moved into an open position,
in which a connection is provided between the space and the duct part
via the orifice (4) when the force produced by the pressure of the me-
dium exceeds the force of a counter-element (11), especially a spring
10 element, and the shutter element (5) is moved into a closed position, in
which the connection via the orifice (4) into the duct element is closed,
when the force produced by the pressure of the medium falls below the
force of the counter-element (11), especially a spring element.

15 6. An apparatus for reducing the adverse effects of a fire, said appa-
ratus comprising at least one spray head which, when activated, has been
arranged to spray a mist of a medium in a duct part (1) leading out of a
space so that in the vicinity of the orifice (4) of the duct (1) a suction
from the space into the duct (1) is created, c h a r a c t e r i z e d in
20 that the apparatus comprises at least one shutter element (5) placed in
conjunction with the orifice (4) of the duct and movable between at
least two positions, of which a first position is an open position, in which
the passage through the orifice of the duct into the duct is open, and a
second position is a closed position, in which the passage through the
25 orifice of the duct into the duct is closed, and an actuating mechanism
(6) for operating the shutter element.

30 7. An apparatus according to claim 6, c h a r a c t e r i z e d in that the
actuating mechanism (6) operating the shutter element (5) comprises a
cylinder-piston combination.

8. An apparatus according to claim 6 or 7, c h a r a c t e r i z e d in
that the actuator (6) of the shutter element (5) is functionally con-
nected to the supply of medium to the first spray head (2).

35 9. An apparatus according to any one of claims 6 - 8, c h a r a c t e r -
i z e d in that the apparatus further comprises a temperature monitor-
ing device (20) and that, based on an impulse obtained from this de-

vice, the shutter element (5) is moved to the second position, the closed position, when necessary.

10. An apparatus according to any one of claims 6 - 9, c h a r a c -
5 t e r i z e d in that the apparatus further comprises at least one second
spray head (21), which has been fitted to spray fire extinguishing me-
dium in the space, preferably in the vicinity of the orifice of the duct
(1), at least on the basis of the impulse given by the temperature moni-
toring device (20).

10

11. An apparatus according to any one of claims 6 - 10, c h a r a c -
t e r i z e d in that the temperature monitoring device (20) is an am-
poule designed to burst at a given temperature, as a result of the burst-
ing of which ampoule a valve element (27) opens a passage (25) for the
15 fire extinguishing medium to the second spray head (21) and/or causes
a second valve element (16) to move so as to close the passage (18) to
the first spray head (2) and/or to the actuator (6) of the shutter ele-
ment.